



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,182	06/30/2003	Dennis K. Killinger	1372.08.PRWOUS	1181
21901 7590 10/26/2007 SMITH HOPEN, PA 180 PINE AVENUE NORTH OLDSMAR, FL 34677			EXAMINER BELLO, AGUSTIN	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 10/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/604,182	Applicant(s) KILLINGER, DENNIS K.	
	Examiner Agustin Bello	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,12-27,30-33 and 36 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,12-27,30-33 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/28/07 has been entered.

Election/Restrictions

2. Claims 12-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 04/06/07.

3. Claims 1-5 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Burns (U.S. Patent No. 6,064,502).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 6, 18, 19, 24, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns in view of Aoki (U.S. Patent No. 6,760,110).

Regarding claim 1, Burns teaches at least one optical light source (reference numeral 1 in Figure 1-B) adapted to generate light simultaneously at multiple wavelengths (reference numeral 24 in Figure 2); at least one detector (reference numeral 2 in Figure 1-B) adapted to detect light at multiple wavelengths; different external remote targets and target spatial regions fixed in line-of-sight relation to said optical light source and in line-of-sight relation to said detector (Figure 3); said external remote targets and target spatial regions including trees, buildings (e.g. the wall forming part of a building), clouds, atmospheric aerosols (inherent in the air in Figure 3), and like objects that form a part of an out-of-doors environment (e.g. the air and wall form part of an outdoor environment); a modulating device (reference numeral 24 in Figure 2) connected in modulating relation to said optical light source; said modulating device adapted to modulate each of said multiple wavelengths so that multiple messages are transmitted simultaneously (Figure 3); said communication device adapted to aim said modulated light from said at least one optical light source at said different multiple external remote targets and target spatial regions to separate spatially different communication optical signals from one another (Figure 3), said at least one detector adapted to demodulate (reference numeral 34 in Figure 2) light scattered by said target; said at least one detector including an optical bandpass filter (reference numeral 30 in Figure 2) adapted to pass preselected wavelengths of light and reject wavelengths of light outside of said preselected wavelengths; whereby multiple messages are simultaneously transmitted along multiple wavelengths; and whereby said multiple messages are individually detected by said detector. Burns differs from the claimed invention in that Burns fails to specifically teach that the LED light source is a coherent light source. However, Aoki teaches that LED that produce coherent light are well known in the art (reference numeral 100 in Figure 8). One

Art Unit: 2613

skilled in the art would have been motivated to use an LED producing coherent light in order to produce light at a center wavelength (column 4 lines 43-50 of Aoki). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use an LED producing coherent light such as the LED of Aoki in Burns.

Regarding claim 2, Burns teaches the at least one light source is selected from the group consisting of a laser light source and a light-emitting diode (reference numeral 25 in Figure 2).

Claims 6, 18, 19, and 24, recite a combination of limitation rejected in claims 1-5. Therefore, claims 6, 18, 19, and 24 are rejected on the same grounds as discussed in the rejection of claims 1-5. However, Burns differs from the claimed invention in that Burns fails to specifically teach that a laser is used as the light source. However, the use of lasers in optical communication systems is well known in the art and Official Notice is given to that effect. One skilled in the art would have been motivated to employ a laser in the system of Burns in order to increase the distance capabilities of the apparatus. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a laser in the system of Burns.

Regarding claim 36, Burns teaches a plurality of external remote targets including atmospheric backscatter in non-line-of-sight relation to said detector; said detector adapted to detect multipath backscatter from said multiple backscatter spatial target regions (inherent).

6. Claims 20-23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns and Aoki as applied to the claims above, and further in view of Wilkerson (U.S. Patent No. 5,872,621).

Regarding claims 20 and 25-27, as noted above Burns teaches each of the limitations relating to transmission and reception of light reflected off of remote targets. However, Burns

Art Unit: 2613

differs from the claimed invention in that Burns fails to specifically teach the use of a laser adapted to generate a LIDAR beam. However, Wilkerson teaches the use of LIDAR beam in a communication system that functions in a manner analogous to the system of Burns. One skilled in the art would have been motivated to employ a LIDAR beam in the system of Burns in order to detect the speed of airborne particles and molecules (abstract of Wilkerson). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ a LIDAR beam in the system of Burns.

Regarding claim 21, Burns teaches an electrical signal conditioner (reference numeral 22 in Figure 2) disposed in electrical communication between said data transmitting device and said laser, said electrical signal conditioner adapted to condition signals from said data transmitting device.

Regarding claim 22, Burns teaches an electrical signal conditioner (reference numeral 29 in Figure 2) disposed in electrical communication between said optical detector and said data receiving device, said electrical signal conditioner adapted to condition electrical signals from said optical detector.

Regarding claim 23, the combination of references differs from the claimed invention in that it fails to specifically teach an optical bandpass filter between said receiver telescope and said optical detector. However, the use of optical band pass filters is well known in the art, and Official Notice is given to that effect. One skilled in the art would have been motivated to employ an optical bandpass filter in order to prevent unwanted frequency from being converted to electrical signals. Therefore, it would have been obvious to one skilled in the art at the time

Art Unit: 2613

the invention was made to employ an optical bandpass filter in the device of the combination of references.

7. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns in view of Welch (U.S. Patent No. 5,903,373).

Regarding claims 30 and 31, Burns differs from the claimed invention in that Burns fails to specifically teach that the optical signal is transmitted to a remote external target wherein the backscatter optical signal is detected simultaneously by multiple telescope receivers positioned at different locations. However, Welch teaches that this concept is well known in the art (Figure 8). One skilled in the art would have been motivated to transmit to a remote external target wherein the backscatter optical signal is detected simultaneously by multiple telescope receivers positioned at different locations in order to allow for broadcasting of signals. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transmit to a remote external target wherein the backscatter optical signal is detected simultaneously by multiple telescope receivers positioned at different locations.

8. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns in view of Wilkerson and Welch (U.S. Patent No. 5,903,373).

Regarding claims 32 and 33, the combination of Burns and Wilkerson differs from the claimed invention in that it fails to specifically teach that the optical signal is transmitted to a remote external target wherein the backscatter optical signal is detected simultaneously by multiple telescope receivers positioned at different locations. However, Welch teaches that this concept is well known in the art (Figure 8). One skilled in the art would have been motivated to transmit to a remote external target wherein the backscatter optical signal is detected

simultaneously by multiple telescope receivers positioned at different locations in order to allow for broadcasting of signals. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to transmit to a remote external target wherein the backscatter optical signal is detected simultaneously by multiple telescope receivers positioned at different locations.

Response to Arguments

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. As noted above, the examiner has established a new grounds of rejection based on the Aoki's teaching of an LED that produces coherent light. Furthermore, Burns teaches applicant's targets comprising of buildings in that system of Burns functions in an office environment, the office being a part of a building and an external environment. Burns also teaches atmospheric aerosols in that the air that surrounds the apparatus of Burns inherently is comprised of water molecules and other aerosols.

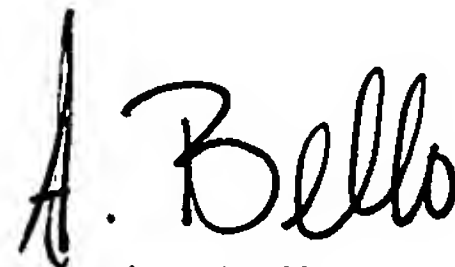
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2613

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "A. Bello". The signature is fluid and cursive, with a large initial "A" and a stylized "Bello".

Agustin Bello
Primary Examiner
Art Unit 2613